

## CLAIMS

What is claimed as new and desired to be protected by Letters Patent of the United States is:

1. A catheter connector system for a catheter, comprising:
  - a boot comprising a tapered outer wall having a diameter that decreases toward a distal end thereof, said outer wall enclosing a longitudinally extending lumen, wherein said boot lumen is sized to prevent axial movement of said catheter when said catheter is positioned therein; and
  - a bifurcation assembly, comprising at least one extension leg extending from a proximal end thereof and at least one stem extending from a distal end thereof, wherein said at least one stem is configured to be received into a lumen of said catheter.
2. The catheter connector system according to claim 1, wherein said boot further comprises a pair of suture wings laterally extending from said outer wall.
3. The catheter connector system according to claim 1, wherein said boot and said bifurcation assembly further comprise coupling sections configured for locking connection to one another.
4. The catheter connector system according to claim 3, wherein said locking connection is permanent.
5. The catheter connector system according to claim 3, wherein said coupling sections are detachable from one another after said locking connection has been established.

6. The catheter connector system according to claim 3, wherein an audible confirmation is provided upon establishment of said locking connection.

7. The catheter connector system according to claim 3, wherein a tactile confirmation is provided upon establishment of said locking connection.

8. The catheter connector system according to claim 3, wherein said boot coupling section comprises a barbed end positioned on a proximal end of said boot, and wherein said bifurcation assembly coupling section comprises a hood positioned on a distal end of said bifurcation assembly surrounding said at least one stem.

9. The catheter connector system according to claim 8, wherein said hood is configured to provide a snap fit with said barbed end.

10. The catheter connector system according to claim 1, wherein said bifurcation assembly comprises a first and second extension leg in fluid communication with a first and second stem.

11. The catheter connector system according to claim 10, wherein said first and second stems are formed of metal.

12. The catheter connector system according to claim 10, wherein said first and second stems have a cross-sectional configuration matching that of a first and second lumen of said catheter.

13. The catheter connector system according to claim 1, wherein said boot is comprised of a soft elastomeric material.

14. The catheter connector system according to claim 13, wherein said material is comprised of either silicone or polyurethane.

15. The catheter connector system according to claim 1, wherein said boot lumen has a diameter smaller than the diameter of an outer wall of said catheter.

16. The catheter connector system according to claim 15, wherein said boot lumen diameter is in the range of approximately 0.50 mm to 4.0 mm and wherein said catheter outer wall diameter is in the range of approximately 0.55 mm to 4.4 mm.

17. A kit for connecting a catheter to extracorporeal medical equipment, comprising:

- a boot comprising a tapered outer wall having a diameter that decreases toward a distal end thereof, said outer wall enclosing a longitudinally extending lumen, wherein said boot lumen is sized to prevent axial movement of said catheter when said catheter is positioned therein;
- a bifurcation assembly, comprising at least one extension leg extending from a proximal end thereof and at least one stem extending from a distal end thereof, wherein said at least one stem is configured to be received into a lumen of said catheter; and
- a dilator comprising a shaft having an outer wall enclosing a longitudinally extending lumen, said shaft configured to expand said boot lumen when positioned therein, said dilator lumen configured for slideable movement over said catheter.

18. The catheter connector system according to claim 17, further comprising at least one obturator, having a rounded tip, positioned through said extension leg and said stem.

19. The catheter connector system according to claim 17, wherein said boot further comprises a pair of suture wings laterally extending from said outer wall.

20. The kit according to claim 17, wherein said catheter has an outer wall with a diameter smaller than the diameter of said dilator lumen.

21. The kit according to claim 20, wherein said dilator lumen diameter is at least approximately .025 mm greater than said catheter outer wall diameter.

22. The kit according to claim 17, wherein said dilator further comprises a transition section positioned at a distal end of said shaft, wherein said transition region is tapered such that the diameter thereof decreases toward a distal end thereof.

23. The kit according to claim 22, wherein said transition section further comprises a rounded tip.

24. The kit according to claim 17, wherein at least a portion of said dilator shaft outer wall contains a lubricant thereon.

25. The kit according to claim 17, wherein said dilator further comprises a handle positioned proximal said shaft.

26. The kit according to claim 25, wherein said handle comprises a fin and a base.

27. The kit according to claim 26, wherein at least one of said fin and base comprises a finger grip.

28. A proximally trimmable catheter system, comprising:  
a catheter comprising at least one lumen;  
a boot comprising a tapered outer wall having a diameter that decreases toward a distal end thereof, said outer wall enclosing a longitudinally extending lumen, wherein said boot lumen is sized to prevent axial movement of said catheter when said catheter is positioned therein;  
a bifurcation assembly, comprising at least one extension leg extending from a proximal end thereof and at least one stem extending from a distal end thereof, wherein said at least one stem is configured to be received into a lumen of said catheter; and  
a dilator comprising a shaft having an outer wall enclosing a longitudinally extending lumen, said shaft configured to expand said boot lumen when positioned therein, said dilator lumen configured for slideable movement over said catheter.
29. The catheter connector system according to claim 28, further comprising at least one obturator, having a rounded tip, positioned through said extension leg and said stem.
30. The catheter connector system according to claim 28, wherein said boot further comprises a pair of suture wings laterally extending from said outer wall.
31. The system according to claim 28, wherein said catheter comprises a first and second lumen, each having a generally trapezoidal cross-sectional shape.

32. The system according to claim 28, wherein said bifurcation assembly comprises a first and second extension leg in fluid communication with a first and second stem, said first and second stems each having a generally trapezoidal cross-sectional shape.

33. A method of attaching a catheter to extracorporeal medical equipment, following placement of a catheter in the body of a patient through a venipuncture site, comprising the steps of:

- providing a boot comprising a tapered outer wall having a diameter that decreases toward a distal end thereof, said outer wall enclosing a longitudinally extending lumen,;
- inserting a shaft of a dilator through said boot lumen;
- sliding said boot and dilator combination over a portion of said catheter extending from said venipuncture site until a distal end of said boot is positioned within said venipuncture site;
- removing said dilator from said boot;
- trimming said catheter at a proximal end of said boot; and
- attaching a bifurcation assembly to said proximal end of said boot.

34. A catheter connector system for an implanted catheter, comprising:  
a boot comprising a tapered outer wall, having a diameter that decreases toward a distal end thereof and enclosing a longitudinally extending lumen, and a first connector member positioned at a proximal end thereof;  
a bifurcation assembly, comprising at least one extension leg extending from a proximal end thereof and a second connector member positioned at a distal end thereof, said second connector member having at least one stem extending therefrom, said stem being configured to be received into a lumen of said catheter; and  
a clamp configured to lock around said first and second connector members.
35. The catheter connector system according to claim 34, wherein said first connector member comprises a proximal portion that produces a compressive force on said catheter upon locking of said clamp therearound.
36. The catheter connector system according to claim 34, wherein said first connector member proximal portion is made of silicone having a durometer equal to approximately 30.
37. The catheter connector system according to claim 34, wherein said clamp further comprises a pair of suture wings.
38. The catheter connector system according to claim 34, wherein said clamp further comprises opposed halves that are connected together in a hinged arrangement.
39. The catheter connector system according to claim 38, wherein said opposed halves comprise interlocking teeth.

40. The catheter connector system according to claim 38, wherein said opposed halves comprise compression rings.

41. The catheter connector system according to claim 34, wherein said bifurcation assembly comprises a first and second extension leg in fluid communication with a first and second stem.

42. The catheter connector system according to claim 41, wherein said first and second stems are formed of metal.

43. The catheter connector system according to claim 41, wherein said first and second stems have a cross-sectional configuration matching that of a first and second lumen of said catheter.

44. The catheter connector system according to claim 34, wherein said first and second connector members are attachable to one another.

45. The catheter connector system according to claim 44, wherein said second connector member comprises a bore and said first connector member comprises a proximal portion that is receivable within said bore.

46. The catheter connector system according to claim 45, wherein said first connector member proximal portion has a frustoconical shape.

47. The catheter connector system according to claim 46, wherein said first connector member proximal portion comprises sectioned panels connected to a base.



48. A kit for connecting a catheter to extracorporeal medical equipment, comprising:

- a boot comprising a tapered outer wall, having a diameter that decreases toward a distal end thereof and enclosing a longitudinally extending lumen, and a first connector member positioned at a proximal end thereof;
- a bifurcation assembly, comprising at least one extension leg extending from a proximal end thereof and a second connector member positioned at a distal end thereof, said second connector member having at least one stem extending therefrom, said stem being configured to be received into a lumen of said catheter;
- a clamp configured to lock around said first and second connector members; and
- at least one obturator, having a rounded tip, positioned through said extension leg and said stem.

49. The kit according to claim 48, further comprising a dilator comprising a shaft having an outer wall enclosing a longitudinally extending lumen, said shaft configured to expand said boot lumen when positioned therein, said dilator lumen configured for slideable movement over said catheter.

50. The kit according to claim 48, wherein said bifurcation assembly comprises a first and second extension leg in fluid communication with a first and second stem.

51. The kit according to claim 50, wherein said first and second stems are formed of metal.

52. The kit according to claim 50, wherein said first and second stems have a cross-sectional configuration matching that of a first and second lumen of said catheter.

53. The kit according to claim 50, comprising a first and second obturator positioned respectively through said first and second extension legs and said first and second stems.

54. A method of attaching a catheter to extracorporeal medical equipment, following placement of a catheter in the body of a patient through a venipuncture site, comprising the steps of:

- providing a boot comprising a tapered outer wall, having a diameter that decreases toward a distal end thereof and enclosing a longitudinally extending lumen, and a first connector member positioned at a proximal end thereof;
- sliding said boot over a portion of said catheter extending from said venipuncture site until a distal end of said boot is positioned within said venipuncture site;
- trimming said catheter at a proximal end of said boot;
- providing a bifurcation assembly, comprising at least one extension leg extending from a proximal end thereof and a second connector member positioned at a distal end thereof, said second connector member having at least one stem extending therefrom, said stem being configured to be received into a lumen of said catheter;
- inserting said stem into said lumen of said catheter; and
- locking a clamp around said first and second connector members.

55. The method according to claim 51, further comprising the step of connecting said first connector member to said second connector member.